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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,299	10/03/2003	Seo-Weon Heo	45820	8837

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EXAMINER

FILE, ERIN M

ART UNIT PAPER NUMBER

2611

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/677,299

Applicant(s)

HEO ET AL.

Examiner

Erin M. File

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8-10, 15 is/are rejected.
- 7) ☐ Claim(s) 4-7 and 11-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 2/24/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizu et al. (U.S. Pub. No. 2002/0015438) and further in view of Dent (U.S. Pub. No. 2003/0053524).

**Claims 1, 9, Ishizu discloses:**

- a finger for processing a multipath signal packet data channel and the packet data control channel, and outputting the processed packet data channel signal and the processed packet data control channel signal (fig. 3, 24<sub>1-n</sub>);
- a combiner for combining the packet data channel signal outputted from the finger in a unit of chip (fig. 3, 26);
- a decoder for decoding an output signal of the interference cancellation section (fig. 3, 32).

Ishizu fails to disclose an interference cancellation section for canceling an interference signal from the combined packet data channel signal, however, Dent discloses an interference cancellation section for canceling an interference signal from the combined packet data channel signal (fig. 2, output of combiner 24 is subject to interference cancellation by 26). Interference cancellation is well known in the art for its advantage of increasing the quality of a received signal. Because of this advantage, it would have been obvious to one skilled in the art at the time of invention to incorporate the post rake combiner interference cancellation as disclosed by Dent into the invention of Ishizu.

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**Claim 3**, Dent discloses the interference cancellation section is located between the finger and the decoder (fig. 2, 24).

4. Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizu et al. (U.S. Pub. No. 2002/0015438) and Dent (U.S. Pub. No. 2003/0053524) as applied to claims 1 and 9 above, and further in view of Nakagome (U.S. Patent No. 4,057,834).

**Claims 2, 10**, neither Ishizu nor Dent disclose a buffer for storing the packet data channel signal outputted from the combiner. However, Nakagome discloses a buffer for storing the packet data channel signal outputted from the combiner (fig. 2, output of combiner 9 is sent to a memory 10). The use of a buffer is well known in the art for its advantages in timing and synchronization of data. Because of this advantage, it would have been obvious to one skilled in the art at the time of invention to incorporate the buffer as disclosed by Nakagome into the combined invention of Ishizu and Dent.

5. Claims 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizu et al. (U.S. Pub. No. 2002/0015438) and Dent (U.S. Pub. No. 2003/0053524) as applied to claims 1 and 9 above, and further in view of Joulloul et al. (U.S. Patent No. 6,430,214).

**Claims 8, 15**, neither Ishizu nor Dent disclose a decoder comprising:

- a Walsh decoder for Walsh-decoding the output of interference canceller;
- a metric generator for generating metrics from the output of the Walsh decoder;

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- a deinterleaver for deinterleaving the output of the metric generator;
- a turbo decoder for turbo-decoding the output of the deinterleaver.

However, Joulloul discloses:

- a Walsh decoder for Walsh-decoding (fig. 1, 106);
- a metric generator for generating metrics from the output of the Walsh decoder (fig. 1, 130);
- a deinterleaver for deinterleaving the output of the metric generator (fig. 1, 134);
- a turbo decoder for turbo-decoding the output of the deinterleaver (fig. 1, 136, col. 2, lines 28-30).

Because Joulloul discloses his invention results in improved receiver performance (abstract, lines 10-11), it would have been obvious to one skilled in the art at the time of invention to incorporate the decoder as disclosed by Joulloul into the combined invention of Ishizu and Dent.

#### ***Allowable Subject Matter***

6. Claims 4-7 and 11-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is (571)272-6040. The examiner can normally be reached on M-F 1:00PM-9:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erin M. File



11/20/2006



MOHAMMED GHAYOUR  
SUPERVISORY PATENT EXAMINER